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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/985,676	11/05/2001	Pankaj Patel	0023-0056	3995
44987	7590	09/11/2007		
HARRITY SNYDER, LLP 11350 Random Hills Road SUITE 600 FAIRFAX, VA 22030			EXAMINER ISMAIL, SHAWKI SAIF	
			ART UNIT 2155	PAPER NUMBER
			MAIL DATE 09/11/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/985,676

Applicant(s)

PATEL ET AL.

Examiner

Shawki S. Ismail

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-12 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-12 and 19-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

RESPONSE TO AMENDMENT

1. This communication is in response to the amendment received on May 29, 2007
Claims 9-12 and 19-23 have been amended.
Claims 9-12 and 19-23 are pending.

Continued Examination Under 37 CFR 1.114 1.

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 21, 2005 has been entered.

The New Grounds of Rejection

3. Applicant's amendment and arguments received on May 29, 2007⁸ have been fully considered, however they are deemed to be moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 9-12 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ferguson et al., (Ferguson) U.S. Patent No. 6,798,777 and in view of "Thread Prioritization: A Thread Scheduling Mechanism for Multiple-Context Parallel Processors" published by Stuart Friske and William J. Dally (hereinafter referred to as Friske/Dally).

6. As to claim 9, Ferguson teaches a method for routing packets received at a network device, the method comprising:

converting the packets into a plurality of data structures (col. 3, lines 20-40);

forwarding, using forwarding logic of the network device, the data structures to a plurality of processing engines of the network device, (col. 12, lines 50-60);

processing, by one of the processing engines, a first data structure relating to one of the packets (col. 2, line 64 – col. 3, line 11);

Ferguson does not explicitly teach halting the processing of the first data structure when first processing information is needed to continue the processing of the first data structure and initiating processing of a second data structure; halting the processing of the second data structure when either second processing information is needed to continue the processing of the second data structure or the first processing information is obtained by the one processing engine;

Firske/Dally teach a thread scheduling mechanism for multiple context parallel processors. Firske/Dally further teach thread prioritization in context switch. This occurs when the processor switches from executing one loaded thread to executing another high priority loaded thread or switching from one thread into another thread. For instance, if there's a cache miss (data is not ready), the processor switches to another thread while waiting for the data be ready for the first thread similar to the claimed halting.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the teaching of Firske/Dally into the invention of Ferguson in order to maximize the processor's resources by allowing the processor to process threads more efficiently while reducing processing delay.

Monitoring, by a monitor of the network device, a processing state of the one processing engine to identify partial processing results based on the halted processing of the plurality of first data structure in advance of the identified need for the first processing information (col. 2, line 64 – col. 3, line 11);

performing, at the one processing engine, a route lookup for the first data structure using the partial processing results (col. 12, lines 50-60);

modifying, at the one processing engine, the data structure based on the route lookup (col. 17, lines 22-45); and

routing, using a switch fabric of the network device, the packet based on the modified data structure (col. 17, lines 22-45).

7. As to claim 10, Ferguson teaches the method of claim 9, further comprising:

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Requesting, by the one processing engine, the first processing information from one or more agents associated with the one processing engine, wherein a prospect of the requesting causes the halting of the processing. (col. 17, lines 22-45).

8. As to claim 11, Ferguson teaches the method of claim 9, further comprising:

conducting accounting, filtering, or policing functions on the first data structure during said performing the route lookup (col. 14, lines 1-7, and col. 2, lines 40-54).

9. As to claim 12, Ferguson teaches the method of claim 9, wherein said performing the route lookup includes:

performing, at each processing; engine, concurrent route lookups for up to four different data structures (col. 12, lines 50-60).

10. As to claim 19-23, they contain similar limitation as claims 9-12; therefore, they are rejected for similar reasons.

Examiner Note:

11. Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

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When reviewing a reference the applicants should remember that not only the specific teachings of a reference but also reasonable inferences which the artisan would have logically drawn therefrom may be properly evaluated in formulating a rejection. In re Preda, 401 F. 2d 825, 159 USPQ 342 (CCPA 1968) and In re Shepard, 319 F. 2d 194, 138 USPQ 148 (CCPA 1963). Skill in the art is presumed. In re Sovish, 769 F. 2d 738, 226 USPQ 771 (Fed. Cir. 1985). Furthermore, artisans must be presumed to know something about the art apart from what the references disclose. In re Jacoby, 309 F. 2d 513, 135 USPQ 317 (CCPA 1962). The conclusion of obviousness may be made from common knowledge and common sense of a person of ordinary skill in the art without any specific hint or suggestion in a particular reference. In re Bozek, 416 F.2d 1385, 163 USPQ 545 (CCPA 1969). Every reference relies to some extent on knowledge of persons skilled in the art to complement that is disclosed therein. In re Bode, 550 F. 2d 656, 193 USPQ 12 (CCPA 1977).

Response to Arguments

12. Applicant's arguments have been fully considered but they are deemed to be moot in view of the new grounds of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawki S Ismail whose telephone number is 571-272-3985. The examiner can normally be reached on M-F 8:30 - 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached at 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shawki Ismail
Patent Examiner
September 4, 2007



SALEH NAJJAR
SUPERVISORY PATENT EXAMINER